SHEET INDEX

CONTENTS	SHEET NO.	ISSUE NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3																						
FS 1 POWER, FUSE & ALARM CKT	B1	1	2	2																						
FS 2 REG SHELF (DUAL ARRANGEMENT)	B2	1	2	2																						
	B3	1	2	2																						
FS 3 REG SHELF (SINGLE ARRANGEMENT)	B4	1	2	2																						
APP FIG. 1	C1	1	2	2																						
APP FIG. 2, 3, 4, 5	C2	1	1	1																						
CIRCUIT NOTES EQUIPMENT NOTES INFORMATION NOTES	D1	1	2	2																						
CAD 1, 2, 3, 3, 5, 6,7	G1	1	2	3																						
BD 1 BLCCK DIAGRAM	H1	1	2	2																						

CONTENTS	SHEET NO.	ISSUE NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

DWG ISSUE	CD ISSUE	DATE ISSUED	
1	1	8-5-77	
2B	1 APPX 1B	6-7-78	
3A	1 APPX 2A	9-2-78	

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

SUPPORTING INFORMATION

CATEGORY	NO.
POWER, FUSE & ALARM PANEL	ED-97733-33
REG BAYS	J98625G J98625H J98625J
BACKPLANE	ED-97858-30
POWER UNIT	71A2, 71A3
RANGE EXTENDER	5A
REG SHELF	J98625L
COMMON LANGUAGE CODE	795-201-149 795-202-149
EQUIPMENT DESIGN REQT	801-407-155

ISSUE 3A

1/31

COMMON SYSTEMS

RANGE EXTENDER WITH GAIN (REG)
BAY WIRING AND
APPLICATION SCHEMATIC

DLIR

2

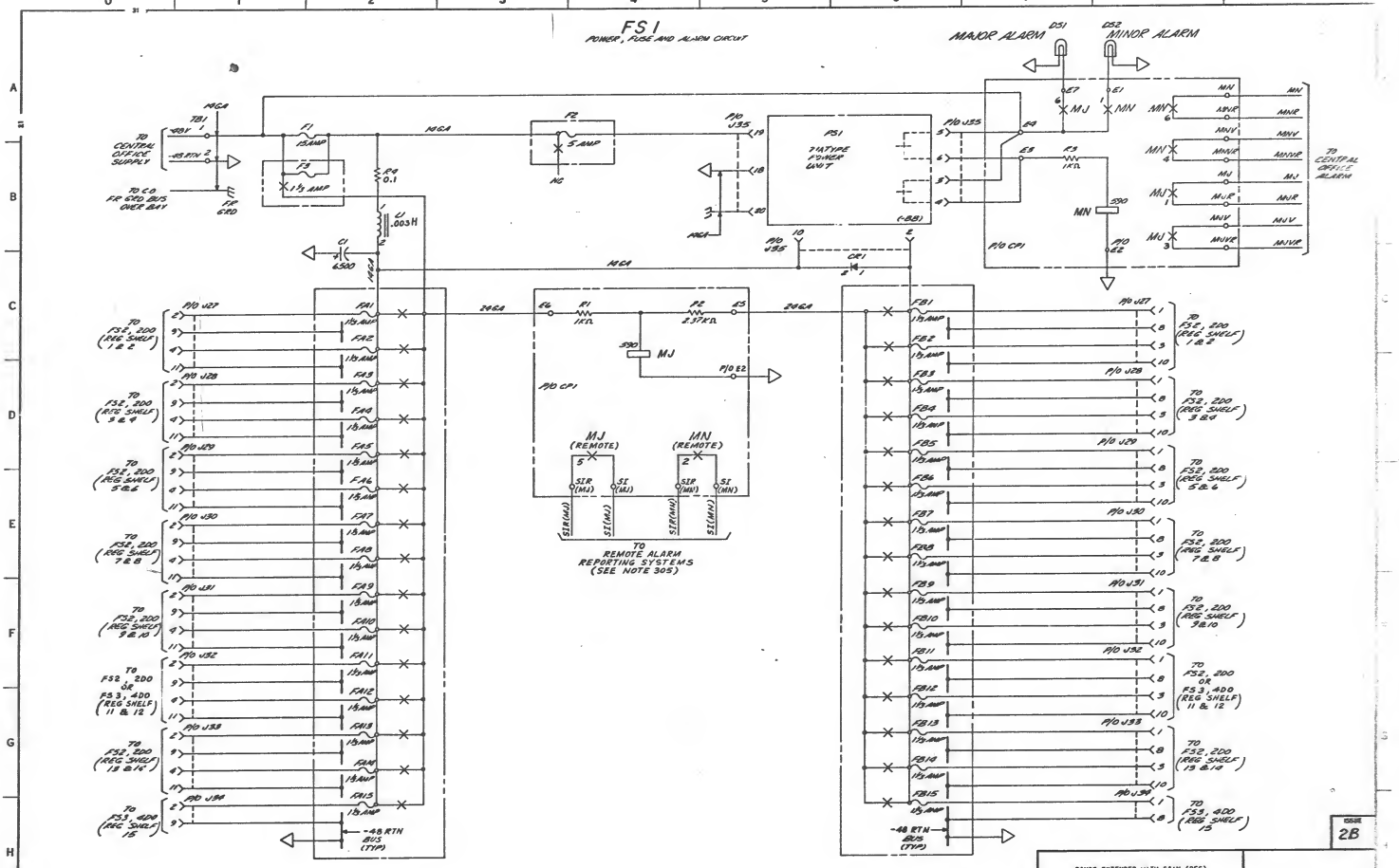
BELL TELEPHONE LABORATORIES
INCORPORATED

6S

AT&TCO STANDARD

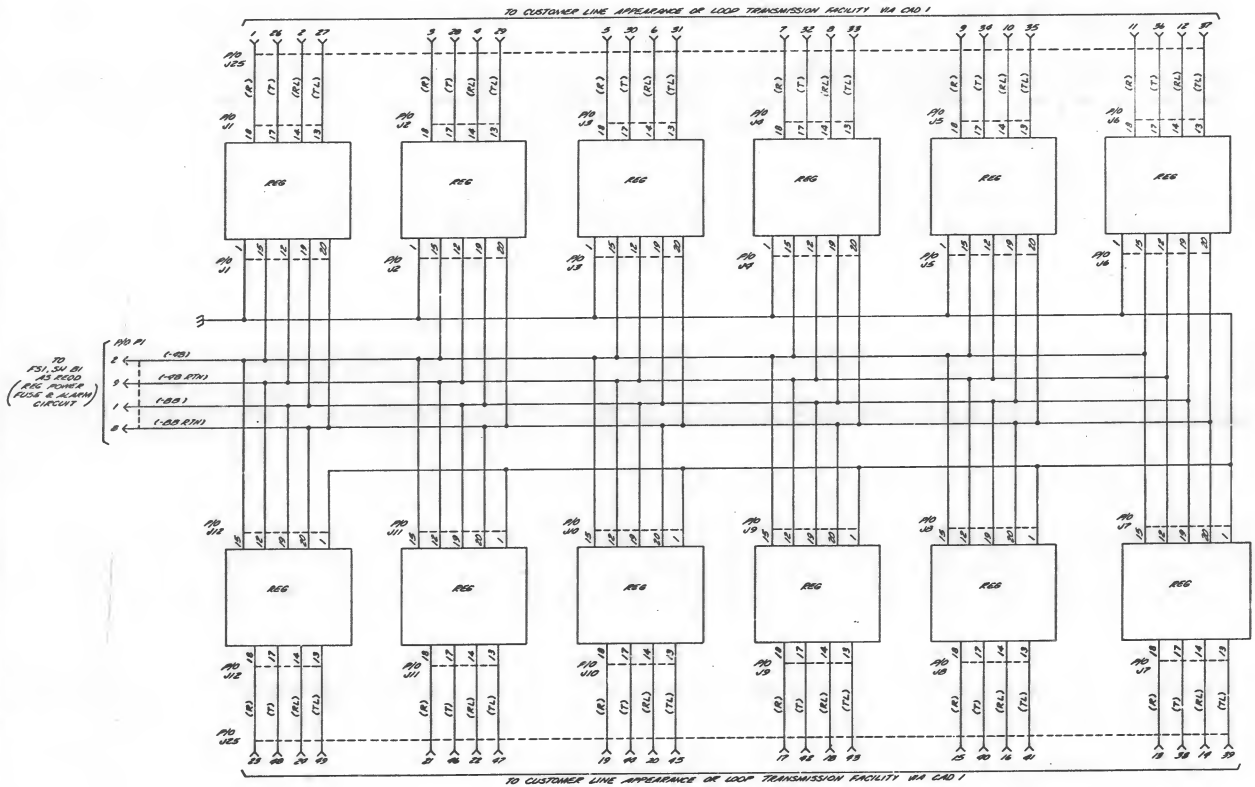
SD-97722-02-A1

10 SHEETS


FS1
POWER, FUSE AND ALARM CIRCUIT
MAJOR ALARM
MINOR ALARM
TO CENTRAL OFFICE SUPPLY
TO CO FR GND BUS OVER BAY
TO CENTRAL OFFICE ALARM
TO FS2, 200 (REG SHELF 1 & 2)
TO FS2, 200 (REG SHELF 3 & 4)
TO FS2, 200 (REG SHELF 5 & 6)
TO FS2, 200 (REG SHELF 7 & 8)
TO FS2, 200 (REG SHELF 9 & 10)
TO FS2, 200 OR FS3, 400 (REG SHELF 11 & 12)
TO FS2, 200 (REG SHELF 13 & 14)
TO FS3, 400 (REG SHELF 15)
TO REMOTE ALARM REPORTING SYSTEMS (SEE NOTE 305)
-48 RTN BUS (TYP)
MJ (REMOTE)
MN (REMOTE)
74 TYPE POWER UNIT
ISSUE 2B
RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC
SD-97722-02-81
BELL TELEPHONE LABORATORIES INCORPORATED
6S

PART OF FS 2

REG SHELF DUAL ARRANGEMENT



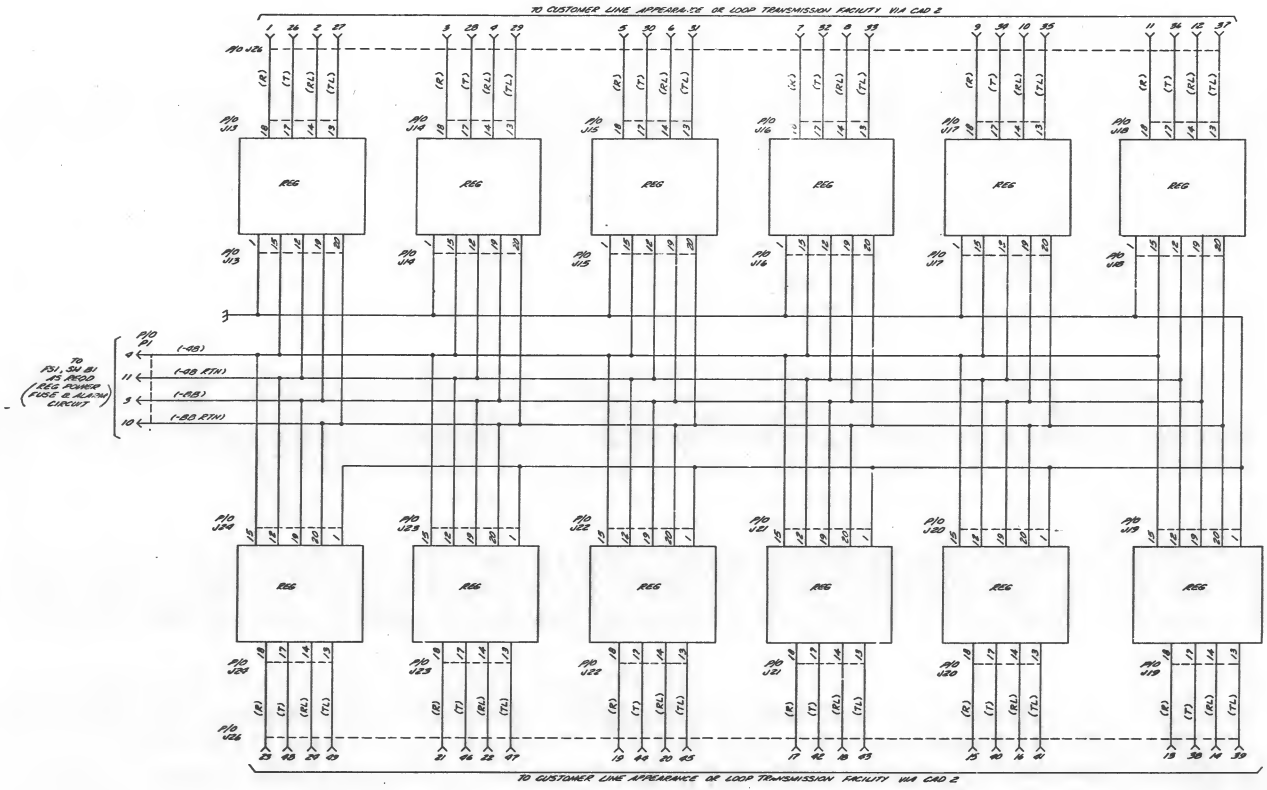
ISSUE 2B

RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC

SD-97722-02-B2

BELL TELEPHONE LABORATORIES INCORPORATED

6S



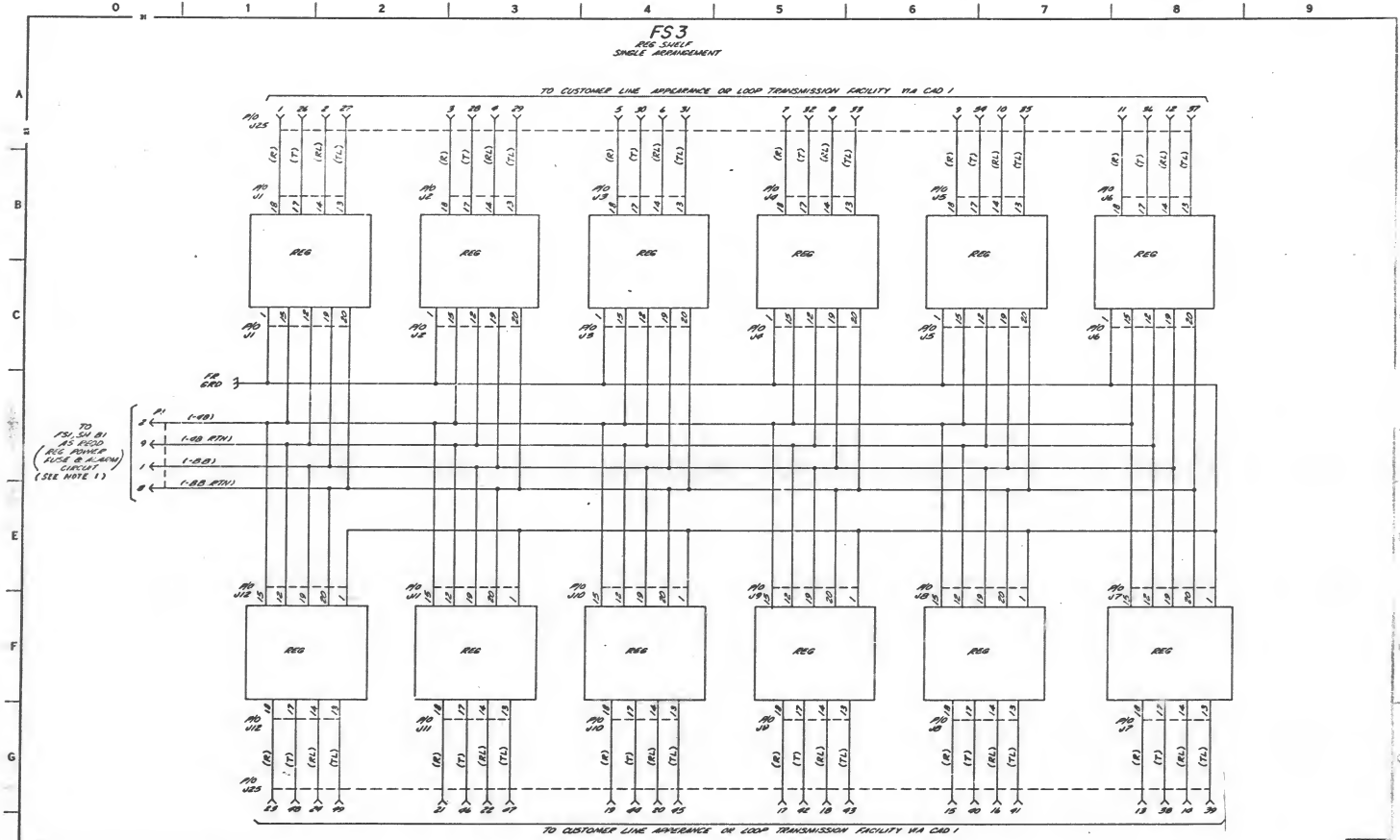
ISSUE 2B

RANGE EXTENDER WITH GAIN (REG)
BAY WIRING AND
APPLICATION SCHEMATIC

SD-97722-02-B3

BELL TELEPHONE LABORATORIES
INCORPORATED

6S



NOTES:

1. FOR MISCELLANEOUS INSTALLATION OF J98625L SHELF, SEE CAD 1.

ISSUE 2B

RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC

SD-97722-02-B4

BELL TELEPHONE LABORATORIES INCORPORATED

SHEET 6S

APP FIG 1
POWER, FUSE AND ALARM PANEL

CIRCUIT PACK

DESIG	LOC	CODE
CP1	1B7,1C4	ED-97869-30

E/M

RELAY

DESIG	M4		M5	
CODE	BF15		BF15	
OPTION				
	CONT ARR	LOC	CONT ARR	LOC
6	M	1B7	M	1B8
5	M	1C4	M	
4	M		M	1B8
3	M	1B8	M	
2	M		M	1C4
1	M	1B8	M	1B8
COIL		1C4		1B7

RESISTOR

DESIG	LOC	CODE
R1	1C4	KS-20289 L6C, 1KΩ
R2	1C5	KS-20289 L6C, 2.37KΩ
R3	1B7	KS-20289 L6C, 1KΩ

CAPACITOR

DESIG	LOC	CODE
C1	1C2	KS-19262 L1, 6500

LAMP

DESIG	LOC	CODE
DS1	1A7	M1
DS2	1A8	M1

DIODE

DESIG	LOC	CODE
CR1	1C6	485A

INDUCTOR

DESIG	LOC	CODE
L1	1B2	1083A,.003H

FUSE

DESIG	LOC	CODE
F1	1A2	74E
F2	1A4	70D
F3	1B2	70A
[15] FA1-FA15	1C2	70A
[15] FB1-FB15	1C6	70A

RESISTOR

DESIG	LOC	CODE
R4	1B2	KS-20344, L2A, 0.1

CONNECTOR

DESIG	J27	J28	J29	J30	J31	J32	J33	J34	J35	
CODE	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	AMPCHAMP 552308-1 SKT	928E SKT	
OPTION										
TERM.	LOC	LOC	LOC	LOC	LOC	LOC	LOC	LOC	LOC	LOC
20									1B5	
19									1B5	
18									1B5	
17										
16										
15										
14										
13										
12										
11	1C1	1D1	1E1	1E1	1F1	1G1	1G1			
10	1C8	1D8	1D8	1D8	1F8	1G8	1G8		1C5	
9	1C1	1D1	1E1	1E1	1F1	1F1	1G1	1H1		
8	1C8	1D8	1D8	1D8	1F8	1F8	1G8	1H8		
7										
6									1B6	
5									1B6	
4	1C1	1D1	1E1	1E1	1F1	1G1	1G1		1B6	
3	1C8	1D8	1D8	1D8	1F8	1G8	1G8		1B6	
2	1C1	1D1	1E1	1E1	1F1	1F1	1G1	1H1	1C6	
1	1C8	1D8	1D8	1D8	1F8	1F8	1G8	1H8		

ISSUE 2B

RANGE EXTENDER WITH GAIN (REG)
BAY WIRING AND
APPLICATION SCHEMATIC

SD-97722-02-CI

BELL TELEPHONE LABORATORIES INCORPORATED

6S

APP FIG 2
REG SHELF
(DUAL ARRANGEMENT)

CONNECTOR

DESIG	[12]J1-J12	[12]J13-J24	J25	J26	P1
CODE	928E SKT	928E SKT	AMPCHAMP 229941-1 SKT	AMPCHAMP 229941-1 SKT	AMPCHAMP 552134-1 PLUG
OPTION					
TERM.	LOC	LOC	LOC	LOC	LOC
50					
49			2H2	3G2	
48			2H1	3G2	
47			2H3	3G3	
46			2H3	3G3	
45			2H4	3G5	
44			2H4	3G4	
43			2H6	3G6	
42			2H5	3G6	
41			2H7	3G7	
40			2H6	3G7	
39			2H8	3G9	
38			2H8	3G8	
37			2A8	3A8	
36			2A8	3A8	
35			2A7	3A7	
34			2A6	3A7	
33			2A6	3A6	
32			2A5	3A6	
31			2A4	3A5	
30			2A4	3A4	
29			2A3	3A3	
28			2A3	3A3	
27			2A2	3A2	
26			2A1	3A2	
25					
24			2H2	3G2	
23			2H1	3G2	
22			2H3	3G3	
21			2H3	3G3	
20	SH B2	SH B3	2H4	3G4	
19	SH B2	SH B3	2H4	3G4	
18	SH B2	SH B3	2H5	3G6	
17	SH B2	SH B3	2H5	3G5	
16			2H7	3G7	
15	SH B2	SH B3	2H6	3G7	
14	SH B2	SH B3	2H8	3G8	
13	SH B2	SH B3	2H8	3G8	
12	SH B2	SH B3	2A8	3A8	
11			2A8	3A8	301
10			2A7	3A7	301
9			2A6	3A7	200
8			2A5	3A6	200
7			2A5	3A5	
6			2A4	3A4	
5			2A4	3A4	
4			2A3	3A3	301
3			2A3	3A3	301
2			2A2	3A2	200
1	SH B2	SH B3	2A1	3A2	200

APP FIG 3
REG SHELF
(SINGLE ARRANGEMENT)

CONNECTOR

DESIG	[12]1-J12	J25	P1
CODE	928E SKT	AMPCHAMP 229941 SKT	AMPCHAMP 552134-1 PLUG
OPTION			
TERM.	LOC	LOC	LOC
50			
49		4G2	
48		4G1	
47		4G3	
46		4G3	
45		4G4	
44		4G4	
43		4G6	
42		4G5	
41		4G7	
40		4G7	
39		4G8	
38		4G8	
37		4A8	
36		4A8	
35		4A7	
34		4A6	
33		4A5	
32		4A5	
31		4A4	
30		4A4	
29		4A3	
28		4A3	
27		4A2	
26		4A1	
25			
24		4G4	
23		4G4	
22		4G4	
21		4G4	
20	SH B4	4G4	
19	SH B4	4G4	
18	SH B4	4G5	
17	SH B4	4G5	
16		4G7	
15	SH B4	4G6	
14	SH B4	4G8	
13	SH B4	4G8	
12	SH B4	4A8	
11		4A8	
10		4A7	
9		4A7	400
8		4A5	400
7		4A5	
6		4A4	
5		4A4	
4		4A3	
3		4A3	
2		4A2	400
1	SH B4	4A1	400

APP FIG 4
POWER, FUSE, AND ALARM PANEL
(SEE NOTE 1)

POWER UNIT

DESIG	LOC	CODE
PS1	1B6	71A TYPE

APP FIG 5
REG SHELF
(SEE NOTE 2)

RANGE EXTENDER (REG PLUG-IN UNIT)

DESIG	LOC	CODE
REG	SH B2 & B3	5A

NOTES:

1. OLDER VERSION - 71A(MD), 71A1(MD) OR 71A2(A & M ONLY) - POWER UNITS MAY BE USED BY ADHERING TO REQUIREMENTS AS SPECIFIED IN BSP801-407-155. THE NEW DESIGN 71A3 POWER UNIT CAN BE USED IN PLACE OF ANY OF THE PREVIOUS 71A - TYPE POWER UNITS.

2. OLDER VERSION OF J98625AA-1, LIST 1 (MD), LIST 2 (MD) OR LIST 3 (MD) RANGE EXTENDER UNITS MAY BE USED BY ADHERING TO REQUIREMENTS AS SPECIFIED IN BSP 801-407-155.

ISSUE 1

RANGE EXTENDER WITH CRTN (REG)
BAY WIRING AND
APPLICATION SCHEMATIC

SD-97722-02-C2

BELL TELEPHONE LABORATORIES, INCORPORATED

6S

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	QUANTITY
F1	10	-48	1 PER ED-97733-31
F2	5	-48	1 PER ED-97733-31
F3	1-1/3	-48	1 PER ED-97733-31
F4	1-1/3	-48	1 PER ED-97858-30, GRP 2
F4	1-1/3	-48	2 PER ED-97858-30, GRP 1
F8	1-1/3	-88	1 PER ED-97858-30, GRP 2
F8	1-1/3	-88	2 PER ED-97858-30, GRP 1
BATTERY SYMBOL		VOLTAGE RANGE	

102.

FEATURE OR OPTION		PROVIDE		
		APP FIG.	ZPP OR ARG	QUANTITY (MAXIMUM)
11'-6" HIGH BAY J98625G	DUAL BACKPLANE ED-97858-30, GRP 1	2		7 PER BAY
	SINGLE BACKPLANE ED-97858-30, GRP 2	3		1 PER BAY
	PFB PANEL ED-97733-31	1		1 PER BAY
	POWER UNIT 71 TYPE	4		1 PER BAY
	RANGE EXTENDER REG 5A	5		180 PER BAY
9'-0" HIGH BAY J98625H	DUAL BACKPLANE ED-97858-30, GRP 1	2		5 PER BAY
	SINGLE BACKPLANE ED-97858-30, GRP 2	3		1 PER BAY
	PFB PANEL ED-97733-31	1		1 PER BAY
	POWER UNIT 71 TYPE	4		1 PER BAY
	RANGE EXTENDER REG 5A	5		132 PER BAY
7'-0" HIGH BAY J98625J	DUAL BACKPLANE - ED-97858-31, GRP 1	2		4 PER BAY
	PFB PANEL ED-97733-31	1		1 PER BAY
	POWER UNIT 71 TYPE	4		1 PER BAY
	RANGE EXTENDER REG 5A	5		96 PER BAY

103.

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	ABM	MD

CIRCUIT NOTES (CONT):

104. CURRENT DRAIN TABLE:

FUSE	CURRENT DRAIN
F1	10.5 AMP MAX FOR J98625J BAY (-48V)
	12.1 AMP MAX FOR J98625H BAY (-48V)
	14.8 AMP MAX FOR J98625G BAY (-48V)
F2	2.0 AMP MAX (-48V)
F4	.6 AMP MAX (-48V)
F8	.5 AMP MAX (BOOSTED BATTERY)

EQUIPMENT NOTES:

201. IT IS POSSIBLE TO PLUG THE 71 TYPE POWER UNIT INTO A REG CKT CONNECTOR. IF THIS IS DONE IN A WORKING BAY, THE SUBSCRIBER LINE ASSOCIATED WITH THAT REG CKT WILL BE WITHOUT SERVICE. OPERATING CONDITIONS WILL EXIST THAT INDICATE AN UNPLUGGED POWER UNIT. THE POWER UNIT WILL NOT BE DAMAGED.

202. IT IS POSSIBLE TO PLUG A REG CKT INTO THE POWER UNIT CONNECTOR. IF THIS IS DONE IN A WORKING BAY THE REG CKT WILL NOT BE DAMAGED. OPERATING CONDITIONS WILL EXIST THAT INDICATE AN UNPLUGGED POWER UNIT.

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:
REGISTANCE VALUES ARE IN OHMS.
CAPACITANCE VALUES ARE IN MICROFARADS.
VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.

302. THE POWER, FUSE AND ALARM PANEL (ED-97733-31) FUSES AND DISTRIBUTES -48 VOLTS AND BOOSTED BATTERY TO THE REG SHELVES. (ED-97858-30, GRP 1) ENC (ED-97858-30, GRP 2). THIS PANEL ALSO CONTAINS MAJOR AND MINOR ALARM CIRCUITS AND PROVIDES RELAY CLOSURE FOR THE ALARM FUNCTION TO THE CENTRAL OFFICE.

303. TYPICAL ALARM CKT CONNECTIONS

(MINOR ALARMS)

C.O. ALARMS CKTS	CPI			
	MN	MNR	MNY	MNYR
CROSSBAR NO. 5 ALARM CKT SD-25671-01, FIG. 1, FIG. 22, (26) OPTION	MN	MNR	NC	NC
SXS 3558 MISC ALARM CKT . 32192-01, FIG. 1, FIG. 12 & TABLE B	MN	MNG	NC	NC
SXS NO. 1 COMMON AUD & VIS ALM CKT SD-96188-01 FIG. 27, 83 & 78 OR 64	MN	MNR	MNY	MNYR
ESS NO. 1 & NO. 2 REMOTE SCANNER APPLIQUE CKT SD-16210-01, FIG. 1	A OR T	B OR R	NC	NC

(MAJOR ALARMS)

C.O. ALARM CKTS	CPI			
	MJ	MJR	MJY	MJYR
CROSSBAR NO. 5 ALARM CKT SD-25671-01, FIG. 1 FIG. 22, (26) OPTION	MJ	MJR	NC	NC
SXS 3558 MISC ALARM CKT SD-32192-01, FIG. 1 FIG. 12 & TABLE B	MJ	MJG	NC	NC
SXS NO. 1 COMMON AUD & VIS ALM CKT SD-96188-01, FIG. 27, 83 & 78 OR 64	MJ	MJR	MJY	MJYR
ESS NO. 1 & NO. 2 REMOTE SCANNER APPLIQUE CKT SD-16210-01, FIG. 1	A OR T	B OR R	NC	NC

304. THE BOOSTED BATTERY VOLTAGE PROVIDED BY THE POWER UNIT IS REFERRED TO AS "BB".

305. FUNCTIONS FOR REMOTE ALARM REPORTING SYSTEMS HAVE BEEN ADDED IN ISSUE 2B. RELAY CLOSURES ARE PROVIDED FOR BOTH MAJOR AND MINOR ALARMS. IN MOST INSTALLATIONS GROUND RETURN IS SUPPLIED BY THE REMOTE REPORTING SYSTEM. IN THOSE CASES WHERE THE RETURN IS REQUIRED AT THE REG BAY A STRAP CAN BE WRAPPED BETWEEN E2(CPI) AND THE APPROPRIATE ALARM FUNCTION PUNCHING (MNR,MJR)

ISSUE 2B

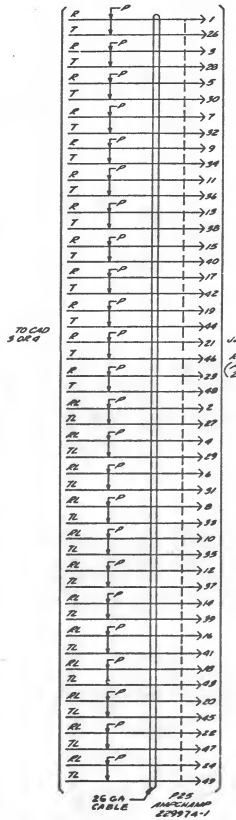
RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC

SD-97722-02-DI

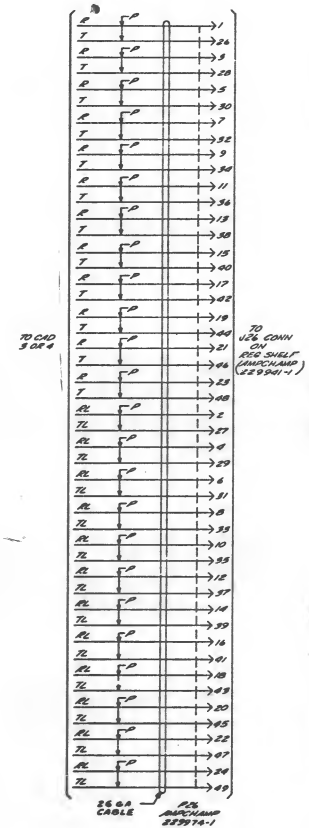
BELL TELEPHONE LABORATORIES INCORPORATED

DATE ISSUE 6S

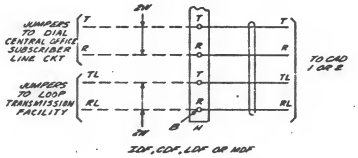
CAD 1
REG SHELF (SINGLE & DUAL)



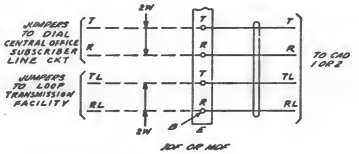
CAD 2
REG SHELF (DUAL)



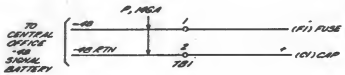
CAD 3
LOOP AND OFFICE CONNECTIONS 3-15, CROSSBAR NO 1 & 2



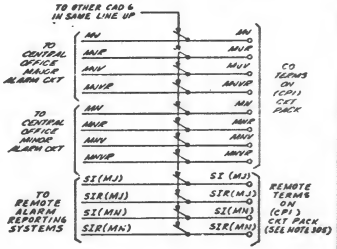
CAD 4
LOOP AND OFFICE CONNECTIONS 4-53 NO 1 & 2



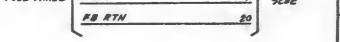
CAD 5
POWER, FUSE & ALARM PANEL



CAD 6
POWER, FUSE & ALARM PANEL



CAD 7
MISCELLANEOUS INSTALLATION FOR J98&99L SHELF



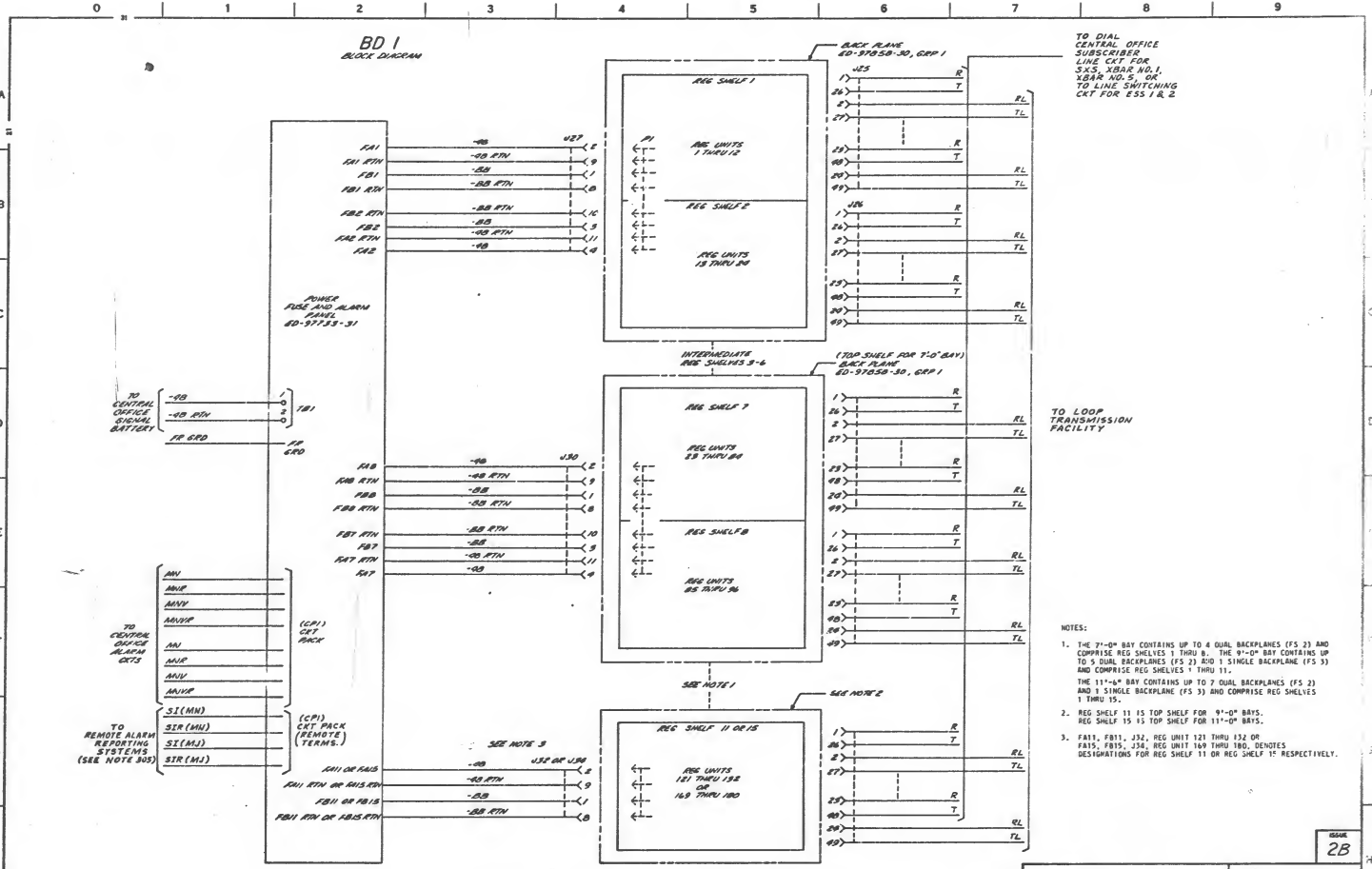
ISSUE 3A

RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC

BELL TELEPHONE LABORATORIES INCORPORATED

SD-97722-02-G1

65



NOTES:

1. THE 7'-0" BAY CONTAINS UP TO 4 DUAL BACKPLANES (FS 2) AND COMPRISE REG SHELVES 1 THRU 8. THE 9'-0" BAY CONTAINS UP TO 5 DUAL BACKPLANES (FS 2) AND 1 SINGLE BACKPLANE (FS 3) AND COMPRISE REG SHELVES 1 THRU 11.

   THE 11'-6" BAY CONTAINS UP TO 7 DUAL BACKPLANES (FS 2) AND 1 SINGLE BACKPLANE (FS 3) AND COMPRISE REG SHELVES 1 THRU 15.

2. REG SHELF 11 IS TOP SHELF FOR 9'-0" BAYS. REG SHELF 15 IS TOP SHELF FOR 11'-0" BAYS.

3. FA11, FB11, J32, REG UNIT 121 THRU 132 OR FA15, FB15, J34, REG UNIT 169 THRU 180, DENOTES DESIGNATIONS FOR REG SHELF 11 OR REG SHELF 15 RESPECTIVELY.

ISSUE 2B

RANGE EXTENDER WITH GAIN (REG) BAY WIRING AND APPLICATION SCHEMATIC

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BELL TELEPHONE LABORATORIES INCORPORATED

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